

Docket No. 2000-046CON2
PATENTAMENDMENTS TO THE CLAIMS

Please substitute the following pending claims 1-31 as replacement claims for the previously-pending version of such claims. In this Amendment C, claim 32 is canceled and claims 1-8, 14-17, 21 and 30-32 have been amended.

1. **(currently amended)** A method for evaluating a plurality of candidate catalysts, the method comprising

providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the plurality of candidate catalysts being provided at a plurality of sites on a common support, the reactor comprising one or more temperature sensors adapted to measure the temperature near in thermal communication with each of the plurality of candidate catalysts,

simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

2. **(currently amended)** The method of claims 3, 14, 15, 16, 17, 21 or 30 ~~claim 1~~ wherein the plurality of candidate catalysts are provided at a plurality of sites on a common support.

3. **(currently amended)** ~~The method of claim 1 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising

providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near the plurality of candidate catalysts, each of the plurality of candidate catalysts being are tagged or labeled to identify particular catalyst candidates,

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simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts.

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors.

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

~~the method further comprising~~

collecting candidate catalysts showing catalytic activity, and

analyzing the tag or label of the collected candidate catalysts to determine the catalyst candidates having catalytic activity.

4. (currently amended) The method of claim 1 2 wherein the support is a plate or sheet having a surface comprising the candidate-catalyst-containing sites.

5. (currently amended) The method of claim 1 2 wherein the support is a plate having a plurality of wells as candidate-catalyst-containing sites.

6. (currently amended) The method of claim 1 2 wherein the support is a monolithic support comprising a plurality of reaction channels as candidate-catalyst-containing sites.

7. (currently amended) The method of claim 1 2 wherein each of the plurality of candidate catalysts is in its own site on the support.

8. (currently amended) The method of claim 1 2 wherein the temperature sensors are adapted to observe temperature change located in the vicinity of the candidate catalysts.

9. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are chemical conversion catalysts.

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10. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are hydrocarbon conversion catalysts.
11. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are inorganic catalysts.
12. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are metals or metal oxides.
13. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are transition metals or transition metal oxides.
14. (currently amended) ~~The method of claim 1 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising
providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near each of the plurality of candidate catalysts, the plurality of catalyst candidates being zeolites,
simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,
detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and
determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.
15. (currently amended) ~~The method of claim 1 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising
providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure

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the temperature near each of the plurality of candidate catalysts, the plurality of catalyst candidates being are metallocenes,

simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

16. (currently amended) ~~The method of claim 1 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising

providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near each of the plurality of candidate catalysts, the plurality of catalyst candidates being are enzymes,

simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

17. (currently amended) ~~The method of claim 1 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising

providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near each of the plurality of candidate catalysts, the plurality of catalyst candidates being are cells,

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simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

18. (previously presented) The method of claim 1 wherein the plurality of catalyst candidates are supported catalysts.

19. (previously presented) The method of claim 1 wherein the plurality of candidate catalysts are simultaneously contacted with the one or more reactants in a plurality of reactor channels formed in a monolithic support.

20. (previously presented) The method of claim 1 wherein the one or more reactants are in the gas phase.

21. (currently amended) The method of claim 1 wherein A method for evaluating a plurality of candidate catalysts, the method comprising providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near each of the plurality of candidate catalysts,

simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts, the one or more reactants being are in the liquid phase,

detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and

determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

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22. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts comprises fifteen candidate catalysts.

23. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts comprises twenty-four candidate catalysts.

24. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts are contacted with the one or more reactants under reaction conditions that include a temperature greater than 100 °C, and additionally, or alternatively, a pressure of greater than 1 bar.

25. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts are formed by calcining catalyst precursors at different temperatures.

26. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts are provided at a plurality of sites on a common support, each of the plurality of candidate catalysts being in its own site on the support.

27. **(previously presented)** The method of claim 1 wherein the plurality of candidate catalysts are simultaneously contacted with the one or more reactants in parallel reactor comprising a plurality of reaction channels, each of the plurality of candidate catalysts being in its own reaction channel.

28. **(previously presented)** The method of claim 27 wherein the parallel reactor comprises a plurality of reaction channels in a monolithic support.

29. **(previously presented)** The method of claim 27 wherein the parallel reactor is a flow reactor and the one or more reactants flow through each of the plurality of reaction channels.

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30. (currently amended) ~~The method of claim 27 wherein~~ A method for evaluating a plurality of candidate catalysts, the method comprising
providing a plurality of candidate catalysts having differing compositions in a parallel reactor, the reactor comprising one or more temperature sensors adapted to measure the temperature near each of the plurality of candidate catalysts, the parallel reactor being is a batch reactor pressurized with the one or more reactants,
simultaneously contacting the plurality of candidate catalysts with the one or more reactants under reaction conditions to catalyze at least one reaction with each of the plurality of candidate catalysts,
detecting temperature changes due to the heat of reaction of the catalyzed reactions using the temperature sensors, and
determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

31. (currently amended) A method for evaluating a plurality of candidate catalysts, the method comprising
flowing a reactant-containing stream through each of a plurality of reaction channels in a parallel flow reactor, each of the plurality of reaction channels comprising an inlet for receiving a reactant-containing stream, an outlet for discharging a product-containing stream, and a catalyst-candidate, and one or more temperature sensors in thermal communication with the catalyst-candidate, the plurality of candidate catalysts having different compositions as compared between the plurality of reaction channels,
simultaneously contacting the plurality of candidate catalysts with one or more reactants under reaction conditions to catalyze at least one reaction in each of the plurality of reaction channels,
detecting temperature changes due to the heat of reaction of the catalyzed reactions using one or more the temperature sensors, and
determining the relative efficacy of the plurality of candidate catalysts based on the detected temperature changes.

32. (canceled).